202306UECM3463OE3b

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Review of preview

Started on	Saturday, 26 August 2023, 11:52 PM
Completed on	Saturday, 26 August 2023, 11:52 PM
Time taken	9 secs
Marks	0/11
Grade	**0** out of a maximum of 10 (**0**%)

1
Marks: 1

A stop-loss reinsurance pays 75% of the excess of aggregate claims above 1,070, subject to maximum payment of 398. For aggregate claims, S, you are given:

- $E[(S-1{,}070)_+] = 450$
- $E[(S-2{,}140)_+] = 225$
- The probability of an aggregate claim amount between 1,070 and 2,140 is zero.

Determine the total amount of claims the reinsurer expects to pay. ______

Answer: ✗

Make comment or override grade

Incorrect
Correct answer: 83.691589
Marks for this submission: 0/1.

2
Marks: 1

Losses follow a compound distribution with both frequency and severity having discrete distribution.
For frequency

$$P_N(z) = 0.33 + 0.67[e^{3.49z}-1]/[e^{3.49}-1]$$

For Severity

$$P_X(z) = 0.52 + 0.18z + 0.18z^2 + 0.08z^3 + 0.04z^4$$

Calculate the Variance of the aggregate losses. ______

Answer: ✗

Make comment or override grade

Incorrect
Correct answer: 7.7486
Marks for this submission: 0/1.

3
Marks: 1

For a certain insurance, individual losses in 2020 were Pareto distributed with parameters $\alpha = 5$ and $\theta = 1100$. A deductible of 110.0 is applied to each loss. In 2021, individual losses have increased 8%. A deductible of 110.0 is still applied to each loss. Determine the standard deviation of amount paid per loss. ______

Answer: ✗

Make comment or override grade

Incorrect
Correct answer: 140282.11

Marks for this submission: 0/1.

4
Marks: 1

Let the frequency distribution be negative binomial with r = 4 and β =2. Let the severity distribution has the exponential distribution with mean 28. Determine $F_S(38)$. ______

Answer:

Make comment or override grade

Incorrect
Correct answer: 0.0754
Marks for this submission: 0/1.

5
Marks: 1

Claim sizes follow an exponential distribution with θ =16.00. Claim counts are independent of claim sizes, and have the following distribution:

n	0	1	2	3
P_n	0.37	0.30	0.20	0.13

Calculate $F_S(8)$. ______

Answer:

Make comment or override grade

Incorrect
Correct answer: 0.507952
Marks for this submission: 0/1.

6
Marks: 1

A random variable has an exponential distribution with mean 90. It is to be discretized using the method of rounding with span 60. Determine the mean of the discretized distribution. ______

Answer:

Make comment or override grade

Incorrect
Correct answer: 88.354688
Marks for this submission: 0/1.

7
Marks: 1

Prescription drug losses, S, are modeled assuming
the number of claims has a geometric distribution
with mean 8.50, and the amount of each prescription is 268.
Calculate E[(S-670)+]. ______

Answer:

Make comment or override grade

Incorrect
Correct answer: 1727.679837
Marks for this submission: 0/1.

8
Marks: 1

A company provides insurance to a concert hall for losses due to power failure. You are given:

- The number of power failures in a year has a Binomial distribution with parameters m = 6 and q = 0.48.
- The distribution of loss amount due to a single power failure is:

Loss Amount	10	20	30	40
Probability	0.60	0.28	0.12	0.00

- There is an annual deductible of 29.

Calculate the expected amount of claims paid by the insurer in one year. ______

Answer:

Make comment or override grade

Incorrect
Correct answer: 17.692284
Marks for this submission: 0/1.

9
Marks: 1

Claim counts follow a Poisson distribution with mean 2. Claim sizes follow an exponential distribution with θ = 1000. This severity distribution is discretized using the method of rounding with span 80. Claim counts and claim sizes are independent. A stop-loss reinsurance contract has a deductible of 184.0. Calculate expected losses paid by the reinsurance contract. _____

Answer:

Make comment or override grade
Incorrect
Correct answer: 2010.5805
Marks for this submission: 0/1.

10
Marks: 1

A company provides insurance to a concert hall for losses due to power failure. You are given:

- The number of power failures in a year has a Binomial distribution with parameters m = 2 and q = 0.65.
- The distribution of loss amount due to a single power failure follows a gamma distribution α = 2 and θ = 11.
- There is an annual deductible of 24.

Calculate the expected amount of claims paid by the insurer in one year. _____

Answer:

Make comment or override grade
Incorrect
Correct answer: 67.753551
Marks for this submission: 0/1.

11
Marks: 1

A stop-loss reinsurance pays 85% of the excess of aggregate claims above 1,000, subject to maximum payment of 468. For aggregate claims, S, you are given:

- $E[(S-1{,}000)_+] = 400$
- $E[(S-2{,}000)_+] = 200$
- The probability of an aggregate claim amount between 1,000 and 2,000 is zero.

Determine the total amount of claims the reinsurer expects to pay. _____

Answer:

Make comment or override grade
Incorrect
Correct answer: 93.6
Marks for this submission: 0/1.